to offer. The Commission will consider the totality of the circumstances to determine whether an alternative to the incumbent LEC's network element is available in such a manner that a requesting carrier can provide service using the alternative. If the Commission determines that lack of access to an element ''impairs'' a requesting carrier's ability to provide service, it may require the unbundling of that element, subject to any consideration of the factors set forth under section 51.317(c).

(2) In considering whether lack of access to a network element materially diminishes a requesting carrier's ability to provide service, the Commission shall consider the extent to which alternatives in the market are available as a practical, economic, and operational matter. The Commission will rely upon the following factors to determine whether alternative network elements are available as a practical, economic, and operational matter:

(i) Cost, including all costs that requesting carriers may incur when using the alternative element to provide the services it seeks to offer;

(ii) Timeliness, including the time associated with entering a market as well as the time to expand service to more customers;

(iii) Quality;

(iv) Ubiquity, including whether the alternatives are available ubiquitously;

(v) Impact on network operations.

(3) In determining whether to require the unbundling of any network element under this rule, the Commission may also consider the following additional factors:

(i) Whether unbundling of a network element promotes the rapid introduction of competition;

(ii) Whether unbundling of a network element promotes facilities-based competition, investment, and innovation;

(iii) Whether unbundling of a network element promotes reduced regulation;

(iv) Whether unbundling of a network element provides certainty to requesting carriers regarding the availability of the element;

(v) Whether unbundling of a network element is administratively practical to apply.

(4) If an incumbent LEC is required to provide nondiscriminatory access to a network element in accordance with §51.311 and section 251(c)(3) of the Act under §51.319 of this section or any applicable Commission Order, no state commission shall have authority to determine that such access is not required. A state commission must comply with the standards set forth in this §51.317 when considering whether to require the unbundling of additional network elements. With respect to any network element which a state commission has required to be unbundled under this §51.317, the state commission retains the authority to subsequently determine, in accordance with the requirements of this rule, that such network element need no longer be unbundled.

[65 FR 2551, Jan. 18, 2000]

§51.319 Specific unbundling requirements.

(a) *Local loop and subloop.* An incumbent LEC shall provide nondiscriminatory access, in accordance with §51.311 and section 251(c)(3) of the Act, to the local loop and subloop, including inside wiring owned by the incumbent LEC, on an unbundled basis to any requesting telecommunications carrier for the provision of a telecommunications service.

(1) *Local loop.* The local loop network element is defined as a transmission facility between a distribution frame (or its equivalent) in an incumbent LEC central office and the loop demarcation point at an end-user customer premises, including inside wire owned by the incumbent LEC. The local loop network element includes all features, functions, and capabilities of such transmission facility. Those features, functions, and capabilities include, but are not limited to, dark fiber, attached electronics (except those electronics used for the provision of advanced services, such as Digital Subscriber Line Access Multiplexers), and line conditioning. The local loop includes, but is not limited to, DS1, DS3, fiber, and other high capacity loops. The requirements in this section relating to dark fiber are not effective until May 17, 2000.

(2) *Subloop.* The subloop network element is defined as any portion of the loop that is technically feasible to access at terminals in the incumbent LEC's outside plant, including inside wire. An accessible terminal is any point on the loop where technicians can access the wire or fiber within the cable without removing a splice case to reach the wire or fiber within. Such points may include, but are not limited to, the pole or pedestal, the network interface device, the minimum point of entry, the single point of interconnection, the main distribution frame, the remote terminal, and the feeder/distribution interface. The requirements in this section relating to subloops and inside wire are not effective until May 17, 2000.

(i) *Inside wire.* Inside wire is defined as all loop plant owned by the incumbent LEC on end-user customer premises as far as the point of demarcation as defined in §68.3 of this chapter, including the loop plant near the end-user customer premises. Carriers may access the inside wire subloop at any technically feasible point including, but not limited to, the network interface device, the minimum point of entry, the single point of interconnection, the pedestal, or the pole.

(ii) *Technical feasibility.* If parties are unable to reach agreement, pursuant to voluntary negotiations, as to whether it is technically feasible, or whether sufficient space is available, to unbundle the subloop at the point where a carrier requests, the incumbent LEC shall have the burden of demonstrating to the state, pursuant to state arbitration proceedings under section 252 of the Act, that there is not sufficient space available, or that it is not technically feasible, to unbundle the subloop at the point requested.

(iii) *Best practices.* Once one state has determined that it is technically feasible to unbundle subloops at a designated point, an incumbent LEC in any state shall have the burden of demonstrating, pursuant to state arbitration proceedings under section 252 of the Act, that it is not technically feasible, or that sufficient space is not available, to unbundle its own loops at such a point.

(iv) *Rules for collocation.* Access to the subloop is subject to the Commission's collocation rules at §§51.321 through 51.323.

(v) *Single point of interconnection.* The incumbent LEC shall provide a single point of interconnection at multi-unit premises that is suitable for use by multiple carriers. This obligation is in addition to the incumbent LEC's obligation to provide nondiscriminatory access to subloops at any technically feasible point. If parties are unable to negotiate terms and conditions regarding a single point of interconnection, issues in dispute, including compensation of the incumbent LEC under forward-looking pricing principles, shall be resolved under the dispute resolution processes in section 252 of the Act.

(3) *Line conditioning.* The incumbent LEC shall condition lines required to be unbundled under this section wherever a competitor requests, whether or not the incumbent LEC offers advanced services to the end-user customer on that loop.

(i) Line conditioning is defined as the removal from the loop of any devices that may diminish the capability of the loop to deliver high-speed switched wireline telecommunications capability, including xDSL service. Such devices include, but are not limited to, bridge taps, low pass filters, and range extenders.

(ii) Incumbent LECs shall recover the cost of line conditioning from the requesting telecommunications carrier in accordance with the Commission's forward-looking pricing principles promulgated pursuant to section 252(d)(1) of the Act.

(iii) Incumbent LECs shall recover the cost of line conditioning from the requesting telecommunications carrier in compliance with rules governing nonrecurring costs in §51.507 (e).

(iv) In so far as it is technically feasible, the incumbent LEC shall test and report trouble for all the features, functions, and capabilities of conditioned lines, and may not restrict testing to voice-transmission only.

(b) *Network interface device.* An incumbent LEC shall provide nondiscriminatory access, in accordance with §51.311 and section 251(c)(3) of the Act, to the network interface device on

an unbundled basis to any requesting telecommunications carrier for the provision of a telecommunications service. The network interface device network element is defined as any means of interconnection of end-user customer premises wiring to the incumbent LEC's distribution plant, such as a cross connect device used for that purpose. An incumbent LEC shall permit a requesting telecommunications carrier to connect its own loop facilities to on-premises wiring through the incumbent LEC's network interface device, or at any other technically feasible point.

(c) *Switching capability.* An incumbent LEC shall provide nondiscriminatory access, in accordance with §51.311 and section 251(c)(3) of the Act, to local circuit switching capability and local tandem switching capability on an unbundled basis, except as set forth in §51.319(c)(2), to any requesting telecommunications carrier for the provision of a telecommunications service. An incumbent LEC shall be required to provide nondiscriminatory access in accordance with §51.311 and section 251(c)(3) of the Act to packet switching capability on an unbundled basis to any requesting telecommunications carrier for the provision of a telecommunications service only in the limited circumstance described in §51.319(c)(4).

(1) *Local circuit switching capability, including tandem switching capability.* The local circuit switching capability network element is defined as:

(i) Line-side facilities, which include, but are not limited to, the connection between a loop termination at a main distribution frame and a switch line card;

(ii) Trunk-side facilities, which include, but are not limited to, the connection between trunk termination at a trunk-side cross-connect panel and a switch trunk card; and

(iii) All features, functions and capabilities of the switch, which include, but are not limited to:

(A) The basic switching function of connecting lines to lines, lines to trunks, trunks to lines, and trunks to trunks, as well as the same basic capabilities made available to the incumbent LEC's customers, such as a telephone number, white page listing and dial tone, and

(B) All other features that the switch is capable of providing, including but not limited to, customer calling, customer local area signaling service features, and Centrex, as well as any technically feasible customized routing functions provided by the switch.

(2) Notwithstanding the incumbent LEC's general duty to unbundle local circuit switching, an incumbent LEC shall not be required to unbundle local circuit switching for requesting telecommunications carriers when the requesting telecommunications carrier serves end-users with four or more voice grade (DS0) equivalents or lines, provided that the incumbent LEC provides nondiscriminatory access to combinations of unbundled loops and transport (also known as the ''Enhanced Extended Link'') throughout Density Zone 1, and the incumbent LEC's local circuit switches are located in:

(i) The top 50 Metropolitan Statistical Areas as set forth in Appendix B of the Third Report and Order and Fourth Further Notice of Proposed Rulemaking in CC Docket No. 96–98, and

(ii) In Density Zone 1, as defined in §69.123 of this chapter on January 1, 1999.

(3) *Local tandem switching capability.* The tandem switching capability network element is defined as:

(i) Trunk-connect facilities, which include, but are not limited to, the connection between trunk termination at a cross connect panel and switch trunk card;

(ii) The basic switch trunk function of connecting trunks to trunks; and

(iii) The functions that are centralized in tandem switches (as distinguished from separate end office switches), including but not limited, to call recording, the routing of calls to operator services, and signaling conversion features.

(4) *Packet switching capability.* (i) The packet switching capability network element is defined as the basic packet switching function of routing or forwarding packets, frames, cells or other data units based on address or other routing information contained in the packets, frames, cells or other data

units, and the functions that are performed by Digital Subscriber Line Access Multiplexers, including but not limited to:

(ii) The ability to terminate copper customer loops (which includes both a low band voice channel and a high-band data channel, or solely a data channel);

(iii) The ability to forward the voice channels, if present, to a circuit switch or multiple circuit switches;

(iv) The ability to extract data units from the data channels on the loops, and

(v) The ability to combine data units from multiple loops onto one or more trunks connecting to a packet switch or packet switches.

(5) An incumbent LEC shall be required to provide nondiscriminatory access to unbundled packet switching capability only where each of the following conditions are satisfied. The requirements in this section relating to packet switching are not effective until May 17, 2000.

(i) The incumbent LEC has deployed digital loop carrier systems, including but not limited to, integrated digital loop carrier or universal digital loop carrier systems; or has deployed any other system in which fiber optic facilities replace copper facilities in the distribution section (*e.g.*, end office to remote terminal, pedestal or environmentally controlled vault);

(ii) There are no spare copper loops capable of supporting xDSL services the requesting carrier seeks to offer;

(iii) The incumbent LEC has not permitted a requesting carrier to deploy a Digital Subscriber Line Access mulltiplexer in the remote terminal, pedestal or environmentally controlled vault or other interconnection point, nor has the requesting carrier obtained a virtual collocation arrangement at these subloop interconnection points as defined by paragraph (b) of this section; and

(iv) The incumbent LEC has deployed packet switching capability for its own use.

(d) *Interoffice transmission facilities.* An incumbent LEC shall provide nondiscriminatory access, in accordance with §51.311 and section 251(c)(3) of the Act, to interoffice transmission facilities on an unbundled basis to any requesting telecommunications carrier for the provision of a telecommunications service. The requirements in this section relating to dark fiber transport are not effective until May 17, 2000.

(1) Interoffice transmission facility network elements include:

(i) Dedicated transport, defined as incumbent LEC transmission facilities, including all technically feasible capacity-related services including, but not limited to, DS1, DS3 and OCn levels, dedicated to a particular customer or carrier, that provide telecommunications between wire centers owned by incumbent LECs or requesting telecommunications carriers, or between switches owned by incumbent LECs or requesting telecommunications carriers;

(ii) Dark fiber transport, defined as incumbent LEC optical transmission facilities without attached multiplexing, aggregation or other electronics;

(iii) Shared transport, defined as transmission facilities shared by more than one carrier, including the incumbent LEC, between end office switches, between end office switches and tandem switches, and between tandem switches, in the incumbent LEC network.

(2) The incumbent LEC shall:

(i) Provide a requesting telecommunications carrier exclusive use of interoffice transmission facilities dedicated to a particular customer or carrier, or use the features, functions, and capabilities of interoffice transmission facilities shared by more than one customer or carrier.

(ii) Provide all technically feasible transmission facilities, features, functions, and capabilities that the requesting telecommunications carrier could use to provide telecommunications services;

(iii) Permit, to the extent technically feasible, a requesting telecommunications carrier to connect such interoffice facilities to equipment designated by the requesting telecommunications carrier, including but not limited to, the requesting telecommunications carrier's collocated facilities; and

(iv) Permit, to the extent technically feasible, a requesting telecommunications carrier to obtain the functionality provided by the incumbent LEC's digital cross-connect systems in the same manner that the incumbent LEC provides such functionality to interexchange carriers.

(e) *Signaling networks and call-related databases.* An incumbent LEC shall provide nondiscriminatory access, in accordance with §51.311 and section 251(c)(3) of the Act, to signaling networks, call-related databases, and service management systems on an unbundled basis to any requesting telecommunications carrier for the provision of a telecommunications service.

(1) *Signaling networks.* Signaling networks include, but are not limited to, signaling links and signaling transfer points.

(i) When a requesting telecommunications carrier purchases unbundled switching capability from an incumbent LEC, the incumbent LEC shall provide access from that switch in the same manner in which it obtains such access itself.

(ii) An incumbent LEC shall provide a requesting telecommunications carrier with its own switching facilities access to the incumbent LEC's signaling network for each of the requesting telecommunications carrier's switches. This connection shall be made in the same manner as an incumbent LEC connects one of its own switches to a signaling transfer point.

(2) *Call-related databases.* Call-related databases are defined as databases, other than operations support systems, that are used in signaling networks for billing and collection, or the transmission, routing, or other provision of a telecommunications service.

(i) For purposes of switch query and database response through a signaling network, an incumbent LEC shall provide access to its call-related databases, including but not limited to, the Calling Name Database, 911 Database, E911 Database, Line Information Database, Toll Free Calling Database, Advanced Intelligent Network Databases, and downstream number portability databases by means of physical access at the signaling transfer point linked to the unbundled databases. The requirements in this section relating to the Calling Name Database, 911 Database, and E911 Database are not effective until May 17, 2000.

(ii) Notwithstanding the incumbent LEC's general duty to unbundle call-related databases, an incumbent LEC shall not be required to unbundle the services created in the AIN platform and architecture that qualify for proprietary treatment.

(iii) An incumbent LEC shall allow a requesting telecommunications carrier that has purchased an incumbent LEC's local switching capability to use the incumbent LEC's service control point element in the same manner, and via the same signaling links, as the incumbent LEC itself.

(iv) An incumbent LEC shall allow a requesting telecommunications carrier that has deployed its own switch, and has linked that switch to an incumbent LEC's signaling system, to gain access to the incumbent LEC's service control point in a manner that allows the requesting carrier to provide any call-related database-supported services to customers served by the requesting telecommunications carrier's switch.

(v) An incumbent LEC shall provide a requesting telecommunications carrier with access to call-related databases in a manner that complies with section 222 of the Act.

(3) *Service management systems*:

(i) A service management system is defined as a computer database or system not part of the public switched network that, among other things:

(A) Interconnects to the service control point and sends to that service control point the information and call processing instructions needed for a network switch to process and complete a telephone call; and

(B) Provides telecommunications carriers with the capability of entering and storing data regarding the processing and completing of a telephone call.

(ii) An incumbent LEC shall provide a requesting telecommunications carrier with the information necessary to enter correctly, or format for entry, the information relevant for input into the incumbent LEC's service management system.

(iii) An incumbent LEC shall provide a requesting telecommunications carrier the same access to design, create, test, and deploy Advanced Intelligent Network-based services at the service management system, through a service creation environment, that the incumbent LEC provides to itself.

(iv) An incumbent LEC shall provide a requesting telecommunications carrier access to service management systems in a manner that complies with section 222 of the Act.

(f) *Operator services and directory assistance.* An incumbent LEC shall provide nondiscriminatory access in accordance with §51.311 and section 251(c)(3) of the Act to operator services and directory assistance on an unbundled basis to any requesting telecommunications carrier for the provision of a telecommunications service only where the incumbent LEC does not provide the requesting telecommunications carrier with customized routing or a compatible signaling protocol. Operator services are any automatic or live assistance to a consumer to arrange for billing or completion, or both, of a telephone call. Directory assistance is a service that allows subscribers to retrieve telephone numbers of other subscribers.

(g) *Operations support systems.* An incumbent LEC shall provide nondiscriminatory access in accordance with §51.311 and section 251(c)(3) of the Act to operations support systems on an unbundled basis to any requesting telecommunications carrier for the provision of a telecommunications service. Operations support system functions consist of pre-ordering, ordering, provisioning, maintenance and repair, and billing functions supported by an incumbent LEC's databases and information. An incumbent LEC, as part of its duty to provide access to the pre-ordering function, must provide the requesting carrier with nondiscriminatory access to the same detailed information about the loop that is available to the incumbent LEC. The requirements in this section relating to loop qualification information are not effective until May 17, 2000.

(h) *High frequency portion of the loop.*

(1) The high frequency portion of the loop network element is defined as the frequency range above the voiceband on a copper loop facility that is being used to carry analog circuit-switched voiceband transmissions.

(2) An incumbent LEC shall provide nondiscriminatory access in accordance with §51.311 of these rules and section 251(c)(3) of the Act to the high frequency portion of a loop to any requesting telecommunications carrier for the provision of a telecommunications service conforming with §51.230 of these rules.

(3) An incumbent LEC shall only provide a requesting carrier with access to the high frequency portion of the loop if the incumbent LEC is providing, and continues to provide, analog circuit-switched voiceband services on the particular loop for which the requesting carrier seeks access.

(4) *Control of the loop and splitter functionality.* In situations where a requesting carrier is obtaining access to the high frequency portion of the loop, the incumbent LEC may maintain control over the loop and splitter equipment and functions, and shall provide to requesting carriers loop and splitter functionality that is compatible with any transmission technology that the requesting carrier seeks to deploy using the high frequency portion of the loop, as defined in this subsection, provided that such transmission technology is presumed to be deployable pursuant to §51.230.

(5) *Loop conditioning.* (i) An incumbent LEC must condition loops to enable requesting carriers to access the high frequency portion of the loop spectrum, in accordance with §§51.319(a)(3), and 51.319(h)(1). If the incumbent LEC seeks compensation from the requesting carrier for line conditioning, the requesting carrier has the option of refusing, in whole, or in part, to have the line conditioned, and a requesting carrier's refusal of some or all aspects of line conditioning will not diminish its right of access to the high frequency portion of the loop.

(ii) Where conditioning the loop will significantly degrade, as defined in §51.233, the voiceband services that the incumbent LEC is currently providing over that loop, the incumbent LEC must either:

(A) Locate another loop that has been or can be conditioned, migrate the incumbent LEC's voiceband service to that loop, and provide the requesting carrier with access to the high frequency portion of the alternative loop; or

(B) Make a showing to the relevant state commission that the original loop cannot be conditioned without significantly degrading voiceband services on that loop, as defined in §51.233, and that there is no adjacent or alternative loop available that can be conditioned or to which the customer's voiceband service can be moved to enable line sharing.

(iii) If the relevant State commission concludes that a loop cannot be conditioned without significantly degrading the voiceband service, the incumbent LEC cannot then or subsequently condition that loop to provide advanced services to its own customers without first making available to any requesting carrier the high frequency portion of the newly-conditioned loop.

(6) *Digital loop carrier systems.* Incumbent LECs must provide to requesting carriers unbundled access to the high frequency portion of the loop at the remote terminal as well as the central office, pursuant to §51.319(a)(2) and §51.319(h)(1).

(7) *Maintenance, repair, and testing.* (i) Incumbent LECs must provide, on a nondiscriminatory basis, physical loop test access points to requesting carriers at the splitter, through a cross-connection to the competitor's collocation space, or through a standardized interface, such as an intermediate distribution frame or a test access server, for the purposes of loop testing, maintenance, and repair activities.

(ii) An incumbent seeking to utilize an alternative physical access methodology may request approval to do so from the relevant state commission, but must show that the proposed alternative method is reasonable, nondiscriminatory, and will not disadvantage a requesting carrier's ability to perform loop or service testing, maintenance or repair.

[65 FR 2551, Jan. 18, 2000; 65 FR 19334, Apr. 11, 2000]

§51.321 Methods of obtaining interconnection and access to unbundled elements under section 251 of the Act.

(a) Except as provided in paragraph (e) of this section, an incumbent LEC shall provide, on terms and conditions that are just, reasonable, and nondiscriminatory in accordance with the requirements of this part, any technically feasible method of obtaining interconnection or access to unbundled network elements at a particular point upon a request by a telecommunications carrier.

(b) Technically feasible methods of obtaining interconnection or access to unbundled network elements include, but are not limited to:

(1) Physical collocation and virtual collocation at the premises of an incumbent LEC; and

(2) Meet point interconnection arrangements.

(c) A previously successful method of obtaining interconnection or access to unbundled network elements at a particular premises or point on any incumbent LEC's network is substantial evidence that such method is technically feasible in the case of substantially similar network premises or points. A requesting telecommunications carrier seeking a particular collocation arrangement, either physical or virtual, is entitled to a presumption that such arrangement is technically feasible if any LEC has deployed such collocation arrangement in any incumbent LEC premises.

(d) An incumbent LEC that denies a request for a particular method of obtaining interconnection or access to unbundled network elements on the incumbent LEC's network must prove to the state commission that the requested method of obtaining interconnection or access to unbundled network elements at that point is not technically feasible.

(e) An incumbent LEC shall not be required to provide for physical collocation of equipment necessary for interconnection or access to unbundled network elements at the incumbent LEC's premises if it demonstrates to the state commission that physical collocation is not practical for technical reasons or because of space limitations.